

United States Patent [19]

Chatwani et al.

[11] Patent Number: 5,586,267

[45] Date of Patent: Dec. 17, 1996

[54] APPARATUS FOR PROVIDING FOR AUTOMATIC TOPOLOGY DISCOVERY IN AN ATM NETWORK OR THE LIKE

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[73] Assignee: Bay Networks, Inc., Santa Clara, Calif.

[21] Appl. No.: 484,656

[22] Filed: Jun. 7, 1995

Related U.S. Application Data

[60] Division of Ser. No. 86,431, Jun. 29, 1993, abandoned, which is a continuation-in-part of Ser. No. 959,732, Oct. 13, 1992, Pat. No. 5,519,707.

[51] Int. Cl. 6 G06F 11/30

[52] U.S. Cl. 395/200.11

[58] Field of Search 364/DIG. 1 MS File, 364/DIG. 2 MS File; 395/200.01, 200.06, 200.1, 200.11; 370/17, 53, 54

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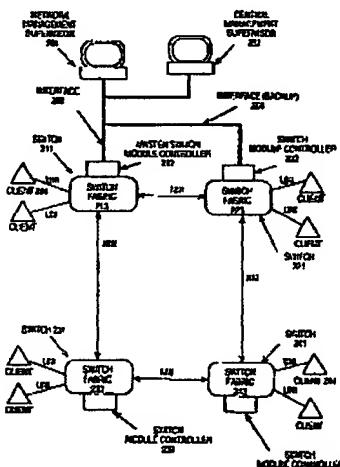
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[57] ABSTRACT

An asynchronous transfer mode (ATM) network or the like employing a method and apparatus for automatically determining the topology of the network is described. The method and apparatus provides for each switch in the network transmitting on each of its ports link advertisement messages (without processing intervention by intermediate switches). The link advertisement messages are received by neighbor switches and forwarded to a topology manager. The topology manager constructs network topology profile information based on received link advertisement messages. Further, the topology manager is able to verify bidirectional links based on the received link advertisement messages.

7 Claims, 53 Drawing Sheets



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Text Search

Close

520 MULTICAST?
412768 COMMUNICAT?
L1 217 MULTICAST? (P) COMMUNICAT?

=> s message (2a) server#
38600 MESSAGE
4490 SERVER#
L2 285 MESSAGE (2A) SERVER#

=> s l1 and l2
L3 11 L1 AND L2

=> s group (3a) 12
09:53:49 COPY AND CLEAR PAGE, PLEASE
539501 GROUP
L4 0 GROUP (3A) L2

=> d his

(FILE 'USPAT' ENTERED AT 09:51:09 ON 14 MAR 1997)

SET PAGELENGTH 62
SET LINELENGTH 78
L1 217 S MULTICAST? (P) COMMUNICAT?
L2 285 S MESSAGE (2A) SERVER#
L3 11 S L1 AND L2
L4 0 S GROUP (3A) L2

=> s 11/ab
73 MULTICAST?/AB
67588 COMMUNICAT?/AB
L5 30 (MULTICAST?/AB (P) COMMUNICAT?/AB)

=> s 12/ab
6163 MESSAGE/AB
687 SERVER#/AB
L6 14 (MESSAGE/AB (2A) SERVER#/AB)

=> s multicast?/ab and network?/ab
73 MULTICAST?/AB
21435 NETWORK?/AB
L7 52 MULTICAST?/AB AND NETWORK?/AB

=> s s client? and server? and broker#
1416639 S
3077 CLIENT?
106 S CLIENT?
(S(W)CLIENT?)
5101 SERVER?
387 BROKER#
L8 0 S CLIENT? AND SERVER? AND BROKER#

=> s client? and server? and broker#
3077 CLIENT?
5101 SERVER?
387 BROKER#
L9 22 CLIENT? AND SERVER? AND BROKER#

=> s 16 or 15 or 17 or 19
L10 93 L6 OR L5 OR L7 OR L9

=>

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